PATENT APPLICATION
Docket No.: N.C. 82,502

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Gubser et al Divisional of Serial No.08/877,880 Parent Filed: June 18, 1997 For: HIGH TEMPERATURE SUPERCONDUCTING CERAMIC OXIDE COMPOSITE WITH RETICULATED METAL FOAM	Examiner: Not yet assigned. Group Art Unit: Not yet assigned July 6, 2000

PRELIMINARY AMENDMENT

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Preliminary to examination, kindly amend the above-identified application as follows:

IN THE CLAIMS:

Please cancel Claims 1 - 17.

Please amend Claims 18 and 19 as follows:

18. (amended) A high temperature superconducting composite made by a process comprising the steps of

providing a reticulated foam structure comprising a metal selected from the group consisting of silver, silver alloy, gold and gold alloy, the reticulated foam structure having continuous ligaments defining a plurality of continuous open cells,

filling the continuous open cells of the reticulated foam structure with a high temperature superconducting ceramic oxide or precursor,

compacting the filled structure, and

heating the compacted structure to melt and/or texture the high temperature superconducting ceramic oxide or precursor to form a continuous region of high temperature superconducting ceramic oxide throughout the compacted structure[.], wherein the metal is selected to have a higher melting temperature than the melt/texture temperature of the superconducting ceramic oxide or precursor.

19. (amended) A high temperature superconducting composite conductor made by a process comprising the steps of

providing a reticulated foam structure made of a metal selected from the group consisting of silver, silver alloy, gold and gold alloy, the reticulated foam structure having continuous ligaments defining a plurality of continuous open cells,

enclosing the reticulated foam structure in a sheath,

filling the continuous open cells of the enclosed reticulated foam structure with a superconducting ceramic oxide or precursor,

compacting the sheath, thereby compacting the enclosed filled reticulated foam structure, and

heating the compacted sheath to melt and/or texture the compacted superconducting ceramic oxide or precursor to form a composite superconducting conductor having a continuous region of superconducting ceramic oxide throughout the enclosed, compressed reticulated foam structure[.],

wherein the metal is selected to have a higher melting temperature than the melt/texture temperature of the superconducting ceramic oxide or precursor.

Please add the following new claims 20 - 29

--20. A high temperature superconducting composite made by a process comprising the steps of:

providing a reticulated foam structure made up of a silver alloy, the reticulated foam structure having continuous ligaments defining a plurality of continuous open cells,

filling the continuous open cells of the reticulated foam structure with a high temperature superconducting ceramic oxide or precursor,

compacting the filled structure, and

heating the compacted structure to melt and/or texture the high temperature superconducting ceramic oxide or precursor to form a continuous region of high temperature superconducting ceramic oxide throughout the compacted structure, wherein the compacted structure is heated to a temperature that is less than the melting temperature of the silver alloy.

21. A composite superconducting conductor made by a process comprising the steps of:

providing a reticulated foam structure made of a silver alloy, the reticulated foam structure having continuous ligaments defining a plurality of continuous open cells,

enclosing the reticulated foam structure in a sheath,

filling the continuous open cells of the enclosed reticulated foam structure with a superconducting ceramic oxide or precursor,

compacting the sheath, thereby compacting the enclosed filled reticulated foam structure, and

heating the compacted sheath to melt and/or texture the compacted superconducting ceramic oxide or precursor, wherein the compacted structure is heated to a temperature that is less than the melting temperature of the silver alloy, to form a composite superconducting conductor having a continuous region of superconducting ceramic oxide throughout the enclosed, compacted reticulated foam structure.

22. The composite superconducting conductor of claim 21, wherein the silver alloy is a silver-palladium alloy.

23. The composite superconducting conductor of claim 22, wherein the silver-palladium alloy comprises at least about 80 % silver by weight.

24. The composite superconducting conductor of claim 22, wherein the silver-palladium alloy comprises at least about 90 % silver by weight.

25. A method of making a high temperature superconducting composite comprising the steps of:

providing a reticulated foam structure made up of a silver alloy, the reticulated foam structure having continuous ligaments defining a plurality of continuous open cells,

filling the continuous open cells of the reticulated foam structure with a high temperature superconducting ceramic oxide or precursor,

compacting the filled structure, and

heating the compacted structure to melt and/or texture the high temperature superconducting ceramic oxide or precursor to form a continuous region of high temperature superconducting ceramic oxide throughout the compacted structure, wherein the compacted structure is heated to a temperature that is less than the melting temperature of the silver alloy.

26. A method of making a composite superconducting conductor comprising the steps of:

providing a reticulated foam structure made of a silver alloy, the reticulated foam structure having continuous ligaments defining a plurality of continuous open cells,

enclosing the reticulated foam structure in a sheath,

filling the continuous open cells of the enclosed reticulated foam structure with a superconducting ceramic oxide or precursor,

compacting the sheath, thereby compacting the enclosed filled reticulated foam structure,

heating the compacted sheath to melt and/or texture the compacted superconducting ceramic oxide or precursor, wherein the compacted structure is heated to a temperature that is less than the melting temperature of the silver alloy, to form a composite superconducting conductor having a

continuous region of superconducting ceramic oxide throughout the enclosed, compacted reticulated foam structure.

27. The method of claim 26, wherein the silver alloy is a silver-palladium alloy.

28. The method of claim 27, wherein the silver-palladium alloy comprises at least about 80 % silver by weight.

29. The method of claim 27, wherein the silver-palladium alloy comprises at least about 90 % silver by weight.--

REMARKS

An amendment adding a cross-reference to the earlier filed, copending parent application, U.S. Serial No. 08/877,880, was included in the Request to File a Divisional Application Under 37 CFR 1.53(b)(1), filed herewith.

The present amendment cancels Claims 1 - 17, which are elected claims in the copending parent application. Claims 18 -19 and new claims 20 - 29 remain in the application for examination.

Kindly charge any additional fees due, or credit overpayment of fees, to Deposit Account No. 50-0281.

Respectfully submitted,

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